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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SMITH, MARCUS	

ART UNIT	PAPER NUMBER
2467	

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12/23/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/623,133	VARSA ET AL.	
	Examiner	Art Unit	
	MARCUS R. SMITH	2467	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 August 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,5,7-11,13,15-17,20-25,27,31,33-35 and 37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,5,7-11,13,15-17,20-25,27,31,33-35 and 37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 8/31/09 under 37 CFR 1.131 is sufficient to overcome the previous cited prior art references.

Response to Arguments

2. Applicant's arguments with respect to claims 1,2,4,5,7-11,13,15-17,20-25,27,31,33-35 and 37 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 4, 5, 7-8, 13, 16-17, 20-22, 27, 31, 33-35, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harumoto et al. (US 2002/0004840) in view of Colavito et al. (US 20030152094) and Radha et al. (US 6,700,893).

With regard to claim 1, Harumoto et al. teaches (see figures 3 and 5): A method for receiving a packet stream at a client (terminal, 102), comprising estimating packet stream transfer delay variation (T_delay: step 101); estimating parameters of a jitter buffer based on the packet stream transfer delay variation (S_target: step 101 or step 107); and transmitting to the server information indicative of an aggregate of the pre-decoder buffering parameters and the jitter buffer (step 102 or step 108: The terminal

has a reception buffer and a decoder buffer (see figure 3) for receiving video stream. The terminal sends its buffer and transmission capacity (buffer and jitter size: S_target), and its time delay (packet stream transfer delay variation) to the server to increase or decrease the transmission speed (see page 6, paragraphs 131-132). But before it sends that information to the server, it must determine or calculate (estimate) that capacity and delay (step s101: page 8, paragraphs 151-153)).

Harumoto fails to disclose that packet stream transfer delay variation indicative of a variation time for transferring of the packet stream from the server to the client.

However Colavito teaches an adaptive jitter buffer management system that updates the buffer threshold by calculating the average packet transit time over the network and uses that information to determine the jitter in the network in order to reduce playout delay and improve quality of service (see abstract and figure 5, steps 506-512.).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have the client/terminal determine the average (estimate) packet transmit time over the network (from server to client) as taught by Colavito in the transmission/reception module of Harumoto in order to reduce playout delay and improve quality of service. Thus, the combination of Harumoto and Colavito will uses average packet transmit time to determine the S-target and transmit that S-target information back to the server to control the transmission speed.

Harumoto and Colavito fails to disclose that the client's signaling engine is receiving from the server pre-decoder buffer parameters to ensure that the client is able

to play out the packet stream without buffer violation when the packet stream is transmitted over a constant delay, reliable transmission channel. Harumoto does disclose (see paragraph 156 on page 8), that there is a host computer that can distribute the transmission capacity information to terminal, but it fails to teach or suggest that the host computer is the server.

Radha teaches a similar system of a server sending a packet stream to a client. Radha teaches a client device that has a pre-decoder buffer (ITD buffer) and a decoder (see figure 1: column 5, lines 45-60). Similar to Harumoto, the client device has a buffer controller (buffer management circuit, 510) that estimates delay, jitter, and bandwidth of the network (column 12, lines 20-35). However, Radha also teaches how parameter (listed above) may be from the streaming video transmitter, 110, (server). Thus Radha teaches a server transmitting to parameter information to the client before estimated the buffer and delay in order to improve the client to compensate for variations in the network (column 2, lines 35-42). Also Radha teaches that channel, 220, on the network is at a constant delay (column 6, lines 1-45).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to a client to receive buffering parameters information from the server, when the packet stream is transmitted over a constant delay, reliable channel as taught by Radha in the system Harumoto and Colavito in order to improve the client to compensate for variations in the network. Thus the combination of Harumoto, Colavito, and Radha will server send buffering information to the client and the client will send

new buffering information back to server back based on the average packet transmit time and jitter information.

With regard to claim 13, Harumoto et al. teaches (see figures 3 and 5): A streaming client, comprising: a pre-decoder buffer (reception buffer, 505) for storing a packet stream from a server (page 6, paragraph 121); a media decoder (playback module, 510) for decoding the packet stream (page 6, paragraph 122); a buffer controller (CPU, 503) for estimating packet stream transfer delay variation and for estimating parameters of a jitter buffer based on the packet stream transfer delay variation (see page 7, paragraphs 138-140: The terminal determines (estimate) its buffer and transmission capacity (buffer and jitter size: S_target), and its time delay (packet stream transfer delay variation.); and a signaling engine (transmission/reception module, 507) for providing information indicative of an aggregate of the pre-decoder buffering parameters and the jitter buffer to the server (page 7, paragraph 142: sends setup command with T_delay, S-target, and/or S-delay.).

Harumoto fails to disclose that packet stream transfer delay variation indicative of a variation time for transferring of the packet stream from the server to the client.

However Colavito teaches an adaptive jitter buffer management system that updates the buffer threshold by calculating the average packet transit time over the network and uses that information to determine the jitter in the network in order to reduce playout delay and improve quality of service (see abstract and figure 5, steps 506-512.).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have the client/terminal determine the average (estimate) packet transmit time over the network (from server to client) as taught by Colavito in the transmission/reception module of Harumoto in order to reduce playout delay and improve quality of service. Thus, the combination of Harumoto and Colavito will uses average packet transmit time to determine the S-target and transmit that S-target information back to the server to control the transmission speed.

Harumoto and Colavito fails to disclose that the client's signaling engine is receiving from the server pre-decoder buffer parameters to ensure that the client is able to play out the packet stream without buffer violation when the packet stream is transmitted over a constant delay, reliable transmission channel. Harumoto does disclose (see paragraph 156 on page 8), that there is a host computer that can distribute the transmission capacity information to terminal, but it fails to teach or suggest that the host computer is the server.

Radha teaches a similar system of a server sending a packet stream to a client. Radha teaches a client device that has a pre-decoder buffer (ITD buffer) and a decoder (see figure 1: column 5, lines 45-60). Similar to Harumoto, the client device has a buffer controller (buffer management circuit, 510) that estimates delay, jitter, and bandwidth of the network (column 12, lines 20-35). However, Radha also teaches how parameter (listed above) may be from the streaming video transmitter, 110, (server). Thus Radha teaches a server transmitting to parameter information to the client before estimated the buffer and delay in order to improve the client to compensate for variations in the

network (column 2, lines 35-42). Also Radha teaches that channel, 220, on the network is at a constant delay (column 6, lines 1-45).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to a client to receive buffering parameters information from the server, when the packet stream is transmitted over a constant delay, reliable channel as taught by Radha in the system Harumoto and Colavito in order to improve the client to compensate for variations in the network. Thus the combination of Harumoto, Colavito, and Radha will server send buffering information to the client and the client will send new buffering information back to server back based on the average packet transmit time and jitter information.

With regard to claims 27 and 34, Harumoto et al. teaches (see figure 2 and 4): A streaming server (101) for transmitting a packet stream to a client device (102), said streaming server comprising: a signaling engine (a transmission/reception module, 402) for receiving information indicative of an aggregate of the client's pre-decoder buffering parameters and a jitter buffer (page 6, paragraph 119, and page 7, paragraph 142: sends setup command with T_delay, S-target, and/or S-delay.); and a rate controller adapted to adjust a rate at which media data is transmitted from the server in accordance with the aggregate buffering parameters (page 7, paragraph 0143: the packet assembling circuit, 406, of server performs rate controlling steps for the data stream.).

Harumoto fails to disclose that packet stream transfer delay variation indicative of a variation time for transferring of the packet stream from the server to the client.

However Colavito teaches an adaptive jitter buffer management system that updates the buffer threshold by calculating the average packet transit time over the network and uses that information to determine the jitter in the network in order to reduce playout delay and improve quality of service (see abstract and figure 5, steps 506-512.).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to have the client/terminal determine the average (estimate) packet transmit time over the network (from server to client) as taught by Colavito in the transmission/reception module of Harumoto in order to reduce playout delay and improve quality of service. Thus, the combination of Harumoto and Colavito will uses average packet transmit time to determine the S-target and transmit that S-target information back to the server to control the transmission speed.

Harumoto and Colavito fails to disclose that the client's signaling engine is receiving from the server pre-decoder buffer parameters to ensure that the client is able to play out the packet stream without buffer violation when the packet stream is transmitted over a constant delay, reliable transmission channel. Harumoto does disclose (see paragraph 156 on page 8), that there is a host computer that can distribute the transmission capacity information to terminal, but it fails to teach or suggest that the host computer is the server.

Radha teaches a similar system of a server sending a packet stream to a client. Radha teaches a client device that has a pre-decoder buffer (ITD buffer) and a decoder (see figure 1: column 5, lines 45-60). Similar to Harumoto, the client device has a buffer controller (buffer management circuit, 510) that estimates delay, jitter, and bandwidth of the network (column 12, lines 20-35). However, Radha also teaches how parameter (listed above) may be from the streaming video transmitter, 110, (server). Thus Radha teaches a server transmitting to parameter information to the client before estimated the buffer and delay in order to improve the client to compensate for variations in the network (column 2, lines 35-42). Also Radha teaches that channel, 220, on the network is at a constant delay (column 6, lines 1-45).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to a client to receive buffering parameters information from the server, when the packet stream is transmitted over a constant delay, reliable channel as taught by Radha in the system Harumoto and Colavito in order to improve the client to compensate for variations in the network. Thus the combination of Harumoto, Colavito, and Radha will server send buffering information to the client and the client will send new buffering information back to server back based on the average packet transmit time and jitter information.

With regard to claim 2, Harumoto teaches: wherein the pre-decoder buffering parameters received are chosen based on variable bit-rate characteristics of the

transmitted packet stream and the buffering (411) applied by the server (page 7, paragraph 0142-0143).

With regard to claims 4, and 20, Harumoto teaches (see figure 4): wherein the information indicative of the aggregate buffering parameters is transmitted to the server at beginning of a new streaming session (RTSP setup is at beginning session, page 6, paragraphs 125 and 131).

With regard to claims 5, 21, and the first part of claim 33, Harumoto teaches (see figure 5)

determining parameters of the jitter buffer based on the estimated packet stream transfer delay variation during a streaming session (step s107) and transmitting an aggregate of the pre-decoder buffering parameters and the changed jitter buffer during the streaming session (step s108: page 8, paragraph 159).

With regard to claims 7, second part of 33, and 37, Harumoto teaches:

wherein the streaming server is adapted to optionally consider the information indicative of the client's chosen pre-decoder buffering parameters in rate control and/or rate shaping (page 7, paragraph 0143: the packet assembling circuit of server performs rate controlling steps for the data stream.)

With regard to claims 8, 22, 31, and 35, Harumoto teaches: wherein the information indicative of the aggregate buffering parameters received by the server includes *at least one* of the following: information regarding a size of the client's pre-decoder buffer (page buffer capacity, page 6, paragraph 132), information regarding a

pre-decoder buffering period, (s delay, page 7, paragraphs 141- 142), and information regarding a post-decoder buffering time.

With regard to claims 16 and 17, Radha teaches: wherein the pre-decoder buffer and the jitter buffer are implemented as a single buffer unit (column 9, lines 1-11: the examiner views the decoder buffer is a jitter buffer and pre-decoder buffer since it transmits the data to decoder at a rate to avoid underflow considerations and handles jitter from the network.).

5. Claims 9-11, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harumoto, Colavito and Radha as applied to claims 1/13 above, and further in view of Deshpande (US 7,047,308).

Harumoto, Colavito and Radha teaches a client sending a buffering parameters to SETUP /PLAY request command (see figure 4 of Harumoto) before the session starts and after the sessions starts (see figure 5 of Harumoto), step 108), but it fails to disclose that the those commands are Real-Time Streaming Protocol messages.

However Deshpande teaches a system, in which client and server uses RSTP messages to communicate and inform with each others about theirs buffer parameters (column 4, lines 55-67).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to uses any RTSP message to relay buffer parameter to the server from the clients as taught by Deshpande in the system of Harumoto, Colavito

and Radha in order to use a typical streaming media system to transmit packet streams (column 1, lines 40-45).

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harumoto, Colavito and Radha as applied to claim 13 above, and further in view of Schuster et al. (US 6,785,261).

Harumoto, Colavito and Radha do not to disclose a post- decoder buffer for storing media data after decoding. However Schuster teaches a buffer after a decoder in VOIP network (see figure 4, buffer 400 is after decoder, 420: column 13, lines 20-40) for transmitting packet streams in order to reduce cost for long distances costs for multimedia conferencing (column 1, lines 25-45). Thus it would have been obvious to one having ordinary skill in the art at the time invention was made to use the buffer after a decoder as taught by Schuster in system of Harumoto, Colavito and Radha in order to reduce cost.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yarroll et al. (US 2003/0115320) and Fried et al. (US 6,735,192).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCUS R. SMITH whose telephone number is (571)270-1096. The examiner can normally be reached on Mon-Thurs: 7:30 am - 5:00 p.m. and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached on 571 272-3011. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MRS 12/17/09
/Pankaj Kumar/
Supervisory Patent Examiner, Art Unit 2467